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ABSTRACT

The purpose of this Personalized Activity Kit (PAK) is to provide a general introduction to the writing of student objectives. Ways are identified to write objectives that clearly describe the knowledge, skills, and attitudes that a school district believes its students ought to learn. The PAK further identifies ways to categorize objectives according to distinct domains--cognitive, affective, and psychomotor. Attention is given to the need to encourage greater emphasis on the writing of objectives for higher-level thinking, attitude development, and creativity. Attention is also given to the development of methods for measuring the attainment of these objectives. Activities, exercises, and facilitator guidelines are included in appendixes. (Author/IRT)

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A SCHOOL IMPROVEMENT - ACCOUNTABILITY PROCESS KIT

PAK #3 1 - WRITING STUDENT OBJECTIVES

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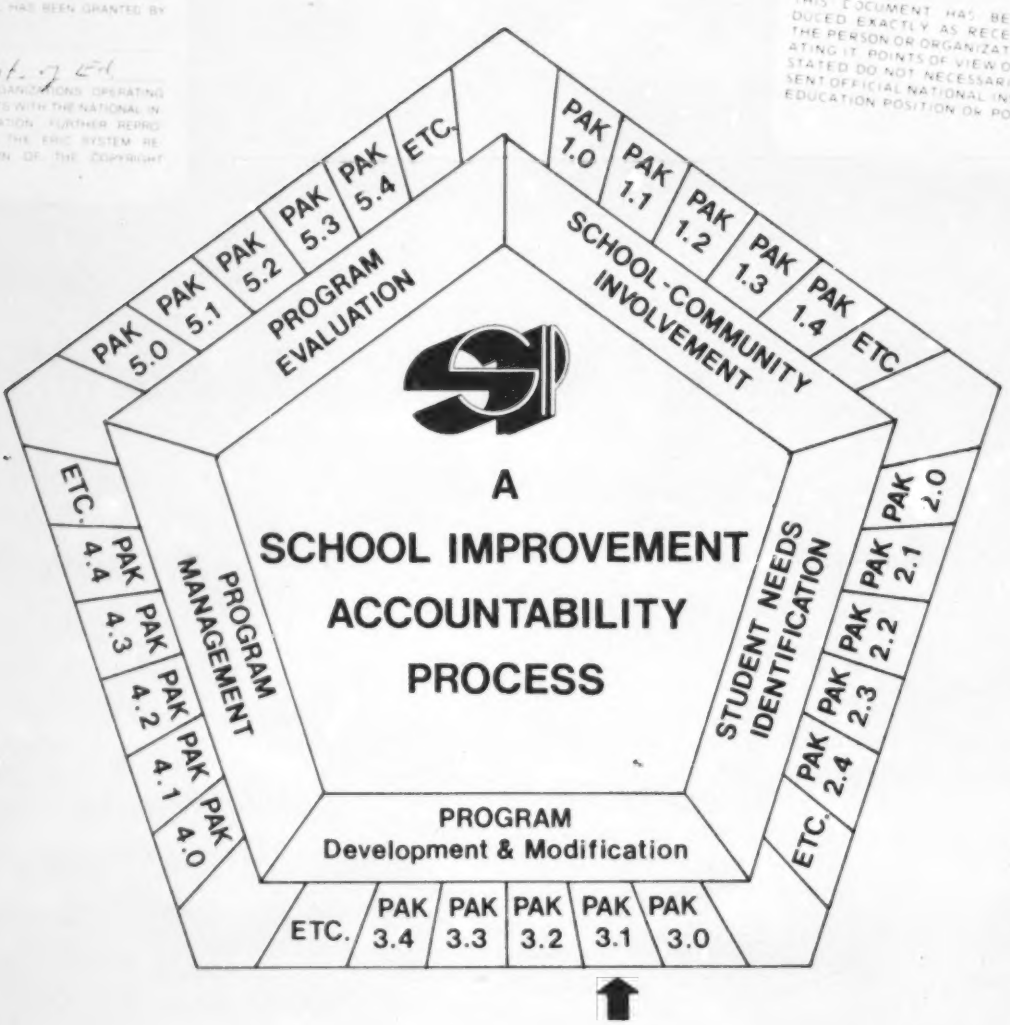

Personalized Activity Kit (PAK) for use as:

- Individualized Study Guide
- Small Group Study Guide
- Workshop Facilitator's Guide

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A SCHOOL IMPROVEMENT - ACCOUNTABILITY PROCESS KIT

PAK #3.1 - Writing Student Objectives

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DIRECTIONS FOR THE USE OF THE PAK

Each PAK is designed to be used in three alternative ways: 1) an individual user can work through the packet on his own; 2) a small group may work co-operatively; or, 3) a group of participants may be involved in a workshop situation under the leadership of a facilitator. Experience indicates that the latter is the most desirable situation. While an individual may work through the materials on his own, he misses those shared learnings which come as learners interact in a group situation.

PLEASE NOTE

Because this PAK will be used by many people in your district, please mark only the worksheets supplied by your instructor. Do not mark the pages of this PAK. Sample transparencies and worksheets (for duplication) are included in Appendices A and B.

If you are using PAK materials in a group workshop situation, consult Appendix A for detailed instructions. The diagram on the cover page in Appendix A may be used to make overhead transparencies.

If you are working through the PAK individually, follow the general directions listed below:

- Read content of the PAK.
- Refer to Appendix A, page 2, for additional instructions.
- Do the exercises on worksheets copied from Appendix B.
- Read the bibliography (when included).

WRITING STUDENT OBJECTIVES

Purpose:

The purpose of this PAK is to provide a general introduction to the writing of student objectives. Ways are identified to write objectives that clearly describe the knowledge, skills and attitudes that a school district believes its students ought to learn. The PAK further identifies ways to categorize objectives according to distinct "domains" or areas of student behavior. Finally, attention is given to the need to encourage greater emphasis upon the writing of objectives for higher-level thinking, attitude development, and creativity.

Deciding upon desired student objectives represents a major step within a School Improvement Process. Without such statements of objectives at the district-wide level and their application at the appropriate building level, there would be little rationale for systematic, long-range planning. These desired outcomes identify clearly what school/community members believe students ought to learn, and they become the focus for all school directed experience.

Student objectives may be described in all of the following areas:

- Skills
- Critical, creative thinking abilities
- Valuing behaviors (attitudes, feelings)
- Understandings/concept development, etc.

The following statements represent a range of typical, district-wide student objectives:

- Effectiveness in expressive writing
- Understanding of fundamental mathematical operations
- The ability to apply study habits and skills
- Demonstrates confidence in himself
- Understands the importance of health care and safety
- The ability to apply relevant concepts, e.g. interdependence, change, power, ecosystems, technology, etc.
- Listen effectively
- Show concern for the well-being of others

(An additional list of sample objectives may be found in Appendix B.)

The student objective is, of course, the statement of specific intent, but such statements are insufficient without some evidence or indication of accomplishment. In a sense then, there are two parts to consider when writing student objectives.

(1) The identification of the objective (e.g. a skill, thinking-feeling ability, valuing or attitudinal behavior).

Note: This describes what the student should learn.

(2) The measurement of that objective (e.g. describing what the student is DOING to confirm that he has acquired the skill and to what degree of attainment).

Note: This describes how the objective may be measured--and suggests a basis for determining how well the objective is being met.

Part 1 encourages us to focus on first things first. What are or should be the priority student outcomes? Have we reached some agreements within a school district as to the student skills, understandings and valuing behaviors which should be facilitated through our cooperative efforts? Until firm decisions are made as to what the student outcomes are to be, it makes little sense to discuss uses of building space, time, materials, activities or any of the varied resources which may be applied to implement those student outcomes.

Part 2 focuses most directly on the unique needs of the individual learner. While a student outcome is generalized and may apply to all (or most) learners, the MEASUREMENT of that outcome demands great flexibility.

We need to consider potential differences among learners, including styles of learning, maturation, interests and physical abilities with emphasis on the humanistic characteristics of learning rather than the merely mechanistic. For example, requiring a child with visual perception problems to demonstrate the attainment of an objective solely through a reading procedure may not succeed in measuring accurately whether the child has mastered the objective. Further, rigid conditions restrict the opportunity for learners creatively to accomplish the objective through slightly different ways. Therefore, PART 2 enables the teacher or teams of teachers to design a variety of measurements or evidence appropriate to the diagnosed needs of individual learners. It is also important to recognize that because of individual differences not all students should be expected to achieve all student outcomes.

Finally, this approach to writing objectives may encourage us to focus more critically on the distinction between skill-concept outcomes and "activities." Early examples of "behavioral" objectives contributed to the writing of countless numbers of "objectives" which in fact would be more accurately described as bits of knowledge demanding of the learner simple recall or regurgitation, often unrelated and irrelevant in themselves. If teachers are obliged to write endlessly these "task-level" objectives, they may never find the time or energy to assist learners in putting the jigsaw puzzle together and understanding the relevance of the pieces to the larger picture.

Suggested Procedures for Identifying District-Wide Student Objectives

There are two related sources that may be useful in determining the essential student objectives for a school district:

1. The results of previous Student Needs Identification Procedures (See PAK Series #2). Through procedures of concerns-gathering and subsequent analyses of that information, a list of valid student educational needs will have been developed.

2. The Professional Staff, drawing upon its expertise across a variety of learning areas, will apply the information mentioned above in developing its district-wide student objectives. This list will likely constitute 300-350 student objectives across the entire curriculum, K-12.

Once these objectives have been written, it would be important for the local accountability committee to be given an opportunity to review them and recommend their adoption by the school district's Board of Education.

There are a number of ways that school district staff members, working both individually and in appropriate groups, may derive a master list of student objectives to be written in the manner earlier described.

Such procedures, depending upon the size of the district, might include the following:

- Individual teachers develop initial list of objectives that apply specifically to their area(s) of expertise.

- Teachers sharing a specific area of instruction (e.g. Science teachers) might work in small groups to share individual lists and reach consensus within a building or perhaps within several buildings (K-12) in a given attendance area.

- It may be helpful for teachers representing different areas of study to meet together to discuss those student objectives for which they share a common responsibility, e.g. student attitudes toward school, student self-concept, critical thinking abilities, etc. These objectives may represent at least 30% of the total list, and it would be important for a staff to work cooperatively in enabling students to achieve these objectives.

DEVELOPING A PLAN FOR MEASUREMENT

Once the objectives have been identified, plans for their measurement may be developed. The categories below illustrate the important questions to be asked in determining the measurement of a student objective, e.g. How will the objective be measured, and who will decide, and what level of mastery will be acceptable?

As much as possible, the measurement factors should be tailored to meet each student's individual learning needs.

Within each category are listed one or more possible criteria to be employed.

How will the objective be measured?	Who will decide?	What level of mastery will be acceptable?
Student product/project	Teacher	Mastery at level appropriate to student
Self-assessment based upon given criteria	Student	Mastery at a level mutually agreed upon by student and teacher
Observation based upon given criteria	Peer group	Achievement at level corresponding to ability of the student
Teacher-made test	Teacher	
Checklists using given criteria	Students, Teacher	
Standardized tests		

Consider the following objective --

The student will demonstrate the ability to read with understanding.

This objective deals with reading comprehension. It will undoubtedly represent a key objective through most of a student's school years. The objective statement therefore remains the same. What will vary will be the kinds of experiences through which the student acquires and evidences increased growth in his understanding and interpretation of varied forms of printed material. For example, measurement of the objective over the years might include any or all of the following:

- *By an oral interpretation to the teacher.*
- *By a variety of paper-pencil responses regarding a reading's content.*

- *By construction of a product conforming to written specifications or directions.*
- *By dramatization.*
- *Interpreting a reading through multi-media presentation.*
- *Other*

While there are no hard or fast rules or definitions to assist one in identifying and writing a student objective that may be distinguished from a conventional "behavioral objective", several guidelines are suggested below.

(1) The student objective should be stated at a broad level of behavior involving a skill, concept or value. It should not describe a fragment of a larger learning outcome or experience. There are many important, often sequential sub-steps that students must move through in acquiring a broad skill or understanding. It is advisable not to write each of these as objectives, for the clerical tasks may become overwhelming. Quite often these sub-steps are important and should be observed and monitored--but they need not be reported as objectives at the building or district level.

(2) The student objective should identify what the learner is to know and do. It should not describe how it is to be done. It is in the Plan for Measurement (the evidence statement) that one or more ways are described to determine whether that student objective has been met.

(3) The student objective and correspondingly, activities, should be clearly linked to one or more district goals. If one has difficulty answering the question, "Why is the learner performing that task?", it may be that the task is not only a fragmented, isolated experience, but it may, in fact, have little to do with identified student needs and correspondingly be inconsistent with the stated district goals.

CLASSIFYING STUDENT OBJECTIVES ACCORDING TO DOMAIN
(Intellectual - Mental - Psychomotor)

Consider the following typical examples of student objectives in Communication Skills:

1. Students will demonstrate positive attitudes toward reading
2. Students will demonstrate effectiveness in small group discussion
3. Students will demonstrate the ability to write legibly

Although all three objectives relate to a common district goal of improving students' communication skills, each one engages a different student learning capability.

Objective #1 concerns student attitudes (feelings, values)

Objective #2 concerns student thinking ability (intellectual)

Objective #3 concerns student motor ability (neuromuscular)

For the past twenty-five years or so, educators have given attention to the problem of describing and classifying these three areas or domains that denote learning.

Out of an early meeting of a group of college examiners attending the 1948 American Psychological Association Convention in Boston, there developed a series of informal meetings held to discuss ways to classify learner behaviors. The result of those meetings was the creation of a Taxonomy* of Educational Objectives...popularly referred to as "Bloom's Taxonomy" in recognition of Benjamin Bloom, editor of the writing committee which produced the first part of the Taxonomy.

Original plans called for a complete taxonomy to be written in three parts, or domains:

Cognitive	-	(knowledge, intellectual abilities, and skills).
Affective	-	(describing changes in interest, attitudes and values).
Psychomotor	-	(manipulative, neuromuscular skills).

By 1964 the second domain had been completed under the senior authorship of David Krathwohl. The third "psychomotor" domain has since been categorized in several versions. In this PAK we offer one developed by Dr. R. H. Dave, National Institute of Education, New Delhi, India. (See Pages 9 through 13).

Until quite recently little attention was given to any practical application of these taxonomies to the "real world" of the classroor. However, increased public interest in determining and describing what the outcomes of learning ought to be have brought them into new prominence. Bloom's Taxonomy represents one means of classifying student objectives according to the appropriate area of mental-psychomotor operation as well as to the level of accomplishment within these domains.

*Taxonomy - the science, laws, or principles of classification, especially the classification of organisms in categories based on common characteristics. (The American Heritage Dictionary of the English Language, 1973).

While we all acknowledge that a learner's thoughts, feelings, and motor responses do not constitute separate entities as Bloom's Domains might suggest, it is helpful to use these descriptors of learning domains as a means to focus on or emphasize the predominant area in which the learning outcome is expected and may be measured accordingly.

For example, if the learning outcome is to be the mastery of a specific numeration skill, we may regard this largely as a cognitive outcome. However, it is doubtful that we would want the learner to accomplish this objective and yet emerge from the experience feeling a distaste for mathematics.

It is obvious that the "climate" of the learning environment, the instructional procedures employed, as well as the motivations which the learner brings to the task, will be important factors in the successful accomplishment of the objective. Therefore, while a learning outcome may call primarily for intellectual activity, we should be acutely aware of what is also taking place in the feeling - attitudinal domain and, in fact, should view the learning outcome in terms of the interrelationship of those thinking-feeling abilities.

The taxonomies illustrated on Pages 9-13 represented an effort not only to describe domains, but the levels of learner activity within each domain as well. Each of the charts incorporate an ascending sequence of learner activities, indicative of a student's intellectual, affective and neuromuscular growth or progress. The charts' descriptors read from bottom to top, from simple to complex.

We are usually able to identify with ease the domain(s) within which the outcome is intended. It is a more difficult task to determine the appropriate level within the domain at which the student must be operating in order to meet the objective.

CLASSIFYING STUDENT OBJECTIVES ACCORDING TO LEVELS OF COMPLEXITY

When a learner is asked to translate (comprehend) material, he is being requested to put a communication into another language or form. It is quite a different level of mental operation to have the learner transform the material or symbols. The latter involves a more complex mental operation (synthesis - See Page 9), that of putting together new products or symbols from previously existing materials. In other words, while translation involves a moving or shifting of symbols into a parallel, correct form, transformation denotes the creating of a new, unique product.

Translation calls for *convergent* thinking

Transformation calls for *divergent* thinking

THE COGNITIVE DOMAIN - (Knowledge - Intellectual Abilities - Skills)

Levels of Thought Processes		Words to Cue Learner Responses	Examples: Indicators of Attainment for Each Level
Complex ▲			
Evaluation -	Determining the worth of something; judge to a standard; selection based upon a set criteria.	Judge - Which are good, bad, which ones do you like - weigh according to.	1. Judge several music compositions according to personal value preference. 2. Judge a superior architectural design according to a set criteria.
Synthesis -	Productive divergent thinking; originality and imagination, putting together new products, concepts from existing resources.	Create - devise - design. Think of different ways - What would happen if - Compose - develop - form a new one.	1. Compose a musical score. 2. Create an original architectural plan for a model home.
Analysis -	Involves the separating of a complex entity into its parts.	Recognize assumptions - Determine relationships - Distinguish cause and effect relationships - Reorganization of points of view - Arrange - What are steps of process - Draw inferences - Recognize the differences.	1. Analysis of a musical composition in terms of the systematic arrangement or structure which makes the composition a unit. 2. Draw a cause-effect relationship between architectural principles applied to a structure and the stress factors involved.
Application -	Problem-solving - Involves use of material in a situation which is different from that situation in which it was originally learned.	Demonstrate - Use it to solve - Where does it lead you - How can you use it - Predict an outcome based upon existing data.	1. Apply rules of music notation in making corrections to an existing musical score. 2. Apply principles of engineering in predicting amount of weight a given roof can take.
Comprehension-	Translating - Interpreting - Extrapolating	Change to a different symbol or medium - Tell it in your own words - Compare and contrast - What is analogy-to explain - Identify relationships.	1. Read a musical score. 2. Read an architectural plan.
Knowledge -	Memory, recall questions	Tell - List - Describe Who - What - When - Where - Which - Do you remember - State - Define - Identify - Relate.	1. From a list of ten names select the names of all those who are noted for their accomplishment in music composition. 2. A person who designs houses is called: a) A carpenter c) A draftsman b) An architect d) A mechanical engineer
▼ Simple			

AFFECTIVE DOMAIN (Attitudes-Values-Interests)

Complex Internalized Active

Levels of Affective Behavior		Words to Describe Learner Responses-Behaviors	Examples: Indicators of Attainment in Affective Domain
Characterization	Generalized Set: Consistency in total behavior; highly internalized set of values.	Readiness to revise judgments, change behavior in light of evidence; willingness to face facts and conclusions that can be logically drawn from them; confidence in ability to succeed.	The learner demonstrates consistency of behavior relating to human health, safety, and law -- takes leadership in developing institutional improvement in these areas.
Organizing	Organizing a Value System	Harmonizes, orders differing values into one system; weighs alternative policies, practices against broad standards.	The learner consistently practices desirable safety behaviors in two or more areas of school/community activity. (e.g. Youth Organizations, Industrial Arts, Driver Education, Physics, Sports, etc.)
	Conceptualizing a Value	Attempts to identify characteristics of an admired object; forms judgments regarding cultural conditions.	
Valuing	Commitment to a Value	Loyalty to groups in which one has membership; devotion to ideas and ideals; participates with conviction.	The learner serves 3 years as school patrolman without irregularity of conduct on duty.
	Preference for a Value	Initiates group action; influences others by speaking and writing; seeking, wanting something that has worth.	The learner writes a letter to the local city council requesting a change in existing city traffic regulations.
	Acceptance of a Value	Willing to be identified with a cause or belief, expresses desire to improve; perceived by others as believing in something because it has worth.	Student recognizes that an unusually high student accident rate demands positive action. He assumes leadership in solving the problem.
Responding	Satisfaction in Responding	Indicates enthusiasm, high degree of interest in something; expresses pleasure in something.	
	Willingness to Respond	Volunteers; assumes responsibility for; cooperates with; contributes to group discussion; consistently demonstrates rules of health and safety.	The learner volunteers to serve on the School Traffic Patrol.
	Compliance in Responding	Obeys (typically seen in terms of behaviors relating to health-safety); participates with little enthusiasm.	The learner obeys traffic regulations.
Receiving Attending	Controlled Attention	Favors a given activity; alertness to relationship between competing stimuli (film and background music).	
	Willingness to Receive	Accepts differences of race, religion, ethnic groups, etc., listens with respect; tolerates different types of music, etc.	The learner listens attentively to a lecture on school playground safety.
	Awareness	Conscious of existence of people, places, things; passive awareness of designs, sights, sounds, etc.	

Simple External Passive

PSYCHOMOTOR DOMAIN (Manipulation, Motor Skills)

Complex ▲

Levels of Psychomotor Behaviors		Words to Describe Learner Responses-Behaviors	Examples: Indicators of Attainment in Psychomotor Domain
Naturalization -	A high level of proficiency in the skill or performance of a single act is required. The behavior is performed with the least expenditure of psychic energy.	Natural, smooth performance. Routinized, automatic and spontaneous. High degree of learner confidence.	Learner performs complex dance movement with skill, ease, grace. Viewed as expression of life style. High degree of self-confidence in ability to dance.
Articulation -	Emphasizes the coordination of a series of acts by establishing appropriate sequence and accomplishing harmony or internal consistency among different acts.	Accurate, controlled performance, incorporating elements of speed and time. Learner response becomes habitual, yet may be modified.	Learner incorporates originality and flexibility of expression into highly complex dance, demonstrating timing, precision. total coordination of body movements.
Precision -	The proficiency of performance reaches a higher level of refinement in reproducing a given act. Here, accuracy, proportion, and exactness in performance become significant.	Minimal errors; higher degree of control, replication, increased self-confidence.	Learner demonstrates ability to perform given dance steps accurately without prompting or assistance from the teacher.
Manipulation -	Emphasizes the development of skill in following directions, performing of selected actions, and fixation of performance through necessary practice. At this level the learner is capable of performing an act according to instruction rather than just on the basis of observation as in the case at the level of imitation.	Follows directions; attention to form, beginning of integrated motor response.	Learner demonstrates ability to accomplish simple series of dance steps following directions of the teacher.
Imitating -	Perceptual readiness (eyes, touch, muscle sense, etc.) When the learner is exposed to an observable action, he begins to make covert imitations of that action. Such covert behavior appears to be the starting point in the growth of psychomotor skill. This is then followed by overt performance of an act and capacity to repeat it. The performance, however, lacks neuromuscular coordination or control, and hence is generally in a crude and imperfect form.	Impulse, crude reproduction, repetition; low degree of learner control, accuracy, confidence.	Learner demonstrates ability to reproduce simple series of dance steps performed by the teacher. *Learner openly repeats previously attempted dance movements - spontaneously, without instruction or direction by the teacher. Indicates an expression of initial self-confidence. *Learner covertly reproduces, mimics dance steps observed in a dance exhibition.

Simple

*This initial state of psychomotor behavior is one which confirms positive readiness and set for the learner's further development in this skill area. If the teacher is keenly observing the learner's imitative activity, and "reads" the learner interest accurately, she can, at this point, identify appropriate ways to encourage his further development in succeeding stages (manipulation, etc.)

As we have stated, convergent thinking is the kind of thinking that requires correct or "right" responses. While it is obviously important to require correct answers in many learning situations, it is surely as important for the learner to have opportunities to generate responses that encourage curiosity, imagination and innovation on his part; that is, divergent (creative) thinking.

Therefore, one of our district-wide student objectives may be:

Students will demonstrate ability to do productive, creative thinking.

It is important at this point to confirm whether the entire learning environment has been geared to produce that outcome. Perhaps some questions we need to consider are:

- How much creative thinking do students presently do in our school building--by design of the program?
- What percentage of questions asked by teachers in tests and in discussions are intended to cue creative thinking responses?
- Does the building's "climate" encourage students to be more open and "risk-taking" in their willingness to "try out" a new kind of answer, or is fear of failure going to block the student's participation?
- Does the school provide ample opportunity for students to do self-directed learning?

In Appendix B are samples of activities to generate divergent thinking on the part of students. Further, the bibliography includes references for source materials in this area.

OBJECTIVES FOR AFFECTIVE LEARNING

Attention has been given to the writing of objectives which encourage students' creative, higher-level thinking. These are usually classified as being in the cognitive domain. However, the development of students' creative abilities appears to be closely linked to the quality of the "learning climate" present and the attitudes students have regarding their own possibilities for successful learning. One might ask:

- Are there opportunities for students to engage in self-directed learning?
- Are there opportunities for students to "try on" new learning experiences without being constrained by "grade-competitiveness" and fear of failure?
- Do students receive support and encouragement from teachers?
- Is question-asking on the part of students at least as important as question-answering?

Therefore, of equal, if not greater importance is the need to identify those objectives which communicate a concern for the emotional growth of students; that is, affective learning.

Such objectives might include:

Students will demonstrate

- the ability to work effectively, independently and with others.
- positive attitudes toward _____ (area of study).
- positive regard for their personal health and safety and that of others.
- positive attitudes regarding school.
- interest and commitment to learning.
- responsible attitudes toward society.
- confidence in their ability to succeed at tasks.

When a school building staff, often through sharing sessions with parent groups, makes some firm decisions on what the "climate for learning" will be in their building, they have taken a giant step toward the accomplishment of affective objectives.

It is widely believed that how a student feels about himself is a key factor in both his cognitive and psychomotor development. Therefore, when a building staff sets its sights on creating "success opportunities" for all their students, they will be addressing themselves to affective education in an important way.

Too often, it is believed that while affective objectives are relatively simple to write, they are extremely difficult to measure.

> *"It is not possible to observe feelings and attitudes directly. We see only their outward manifestation, but they may be concealed, disguised, or exhibited in very subtle ways. Even the person himself may be unaware of change or growth that has taken place. Development of beliefs, values, attitudes, prejudices, etc., occurs unconsciously, for the most part. If we do know that it has occurred, we seldom know when or how. Changes in maturity, confidence, flexibility, resourcefulness, openness, tolerance, etc., usually occur gradually, with little awareness on our part." (See Selected References, Measurement in Support of Affective Education, Page 9.)*

Given the limitations of measurement techniques in affective learning, it is still possible for a building staff to collect and use information that will give them some important clues for improving the quality of affective learning in their building.

Such procedures might include:

- Opportunities for students and staff to respond to "school-climate" questionnaires.
- Opportunities for students, staff, parents to respond to rating and attitude scales that provide information concerning student perceptions of classroom experiences, teacher-student relationships, parent views of school programs, etc.
- Opportunities for students and staff to share activities about school in small group meetings.

MEASURING OBJECTIVES THROUGH UNOBTRUSIVE PROCEDURES *

Because paper-pencil measures may not truly reflect the "real" attitudes or views of a student, it is helpful to develop a variety of "unobtrusive" measures to gauge progress in affective learning.

In unobtrusive measures, the person being measured is not aware of observations being made and hence will not be as likely to influence the resulting observation.

Below are suggested a variety of ways to measure objectives, particularly those concerned with affective learning.

EROSION - Observing the amount of wear or use something has been given as an indication of its popularity and/or frequent use.

- Learning materials (books, film, equipment, etc.)
- Floor tiles may be more worn in front of one exhibit/display rather than another, possibly indicating more frequent attendance at that exhibit.
- Use of supplies on a free-selection basis.
- Wearing down of grass in the playground area.

* Adapted from: Webb, Campbell, Schwartz, Sechrest, Unobtrusive Measures. Chicago: Rand McNally & Company, 1966.

ACCRETION - Observing the amount of accretion or accumulation in something as an indicator of its frequent use and/or popularity.

- Dirt/grease on pages of reading material.
- Cafeteria left-overs; rubbish basket accumulation, (as a means of assessing student concerns following studies focusing on waste resources).

ARCHIVES - Records kept (both running and anecdotal) measuring changes in behavior of students and/or professional staff members.

- Vandalism on school property.
- Attendance of students.
- Professional staff sick leave.
- Book checkouts.
- Calls from parents.
- Attendance at school functions (staff-student-parents-community).
- School rubbish collections.

CONTRIVED OBSERVATIONS - Observing student/staff member behavior in the learning environment.

- Playground activity - peer relations, social behavior.
- Students informally conversing with teachers and/or with fellow students.
- Student behavior in halls, rooms, small group work, independent study, at co-curricular activities.
- Attitudes may be inferred by noting the degree of clustering of students of differing racial and ethnic backgrounds in halls.

SUMMARY

Relevant, clearly stated student objectives provide a sound basis for the systematic improvement of educational programs. These objectives, written at the district-wide level and applied at the appropriate building level, identify the skills, knowledge, attitudes development, and critical-creative thinking abilities which the district believes its students ought to acquire.

Student objectives may be described both in terms of three domains (cognitive, affective, psychomotor) as well as in terms of levels of student accomplishment within these three domains.

As much as possible, the measurement of student objectives is tailored to a student's intellectual development, his maturation, learning style, and interests.

Schools should be encouraged to provide opportunities for students' higher-level thinking, particularly creative thinking. Further, increased attention may need to be given to those objectives that describe affective learning. Although many school district goals state the importance of a positive student self-concept and positive attitudes toward learning, these goals need to become more visible as affective objectives at the building level and in terms of the "learning climate" operating in each building.

SELECTED REFERENCES FOR FURTHER STUDY

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APPENDIX A

FACILITATOR'S GUIDE FOR GROUPS

Each PAK has been organized around a fundamental and widely recognized generalization of how people learn. Learning occurs more efficiently when an overview is presented first. Succeeding learning experiences then take the person deeper into each concept adding more specific details. There may be several levels of exposure until real expertise is developed.

Workshop Specifications

I.	Suggested Time:	Two hours
II.	Facilities:	One room for each 24 participants. Participants to be seated at tables (maximum of six per table). Rooms should provide adequate accoustics and physical comfort suitable for a workshop session.
III.	Equipment & Material Needs:	One overhead projector and viewing screen per room
		Power extension cord (1 per room)
		Transparency sheets
		Grease pencils
		Butcher paper
		Masking tape
		Chalkboard, chalk, eraser
		Name tags (if necessary)

PAK #3.1

INTRODUCTORY WORKSHOP ACTIVITIES

If your staff has had little or no exposure to the writing of student objectives as suggested in this PAK, then a two-hour workshop based on the first part of this PAK could be very beneficial.

1. 20 minutes — Study pages 2 to 6 up to the section on learning domains. In Appendix B are some additional examples of student outcome statements. Read through these.

2. 20 minutes — In small groups discuss the material you have just read. Ask questions and clarify the concept through group interaction.

3. 20 minutes — Think carefully about one major concept you want students to learn in the next few days or weeks. Limit your choice to one subject area. Now, using the suggested format, write a student objective for the concept you have chosen.

4. 30 minutes — Share your student objective with the others in your group. Check to be sure that each objective contains all of these parts:

    A. Learner outcome
    B. Plan for measurement
        1. How
        2. Who
        3. How well

5. 30 minutes — Using the form in Appendix B, Page 4, write your student objective in the places indicated. Next write in the daily student activities which will move the student to mastery of the objective. Finally, list the required instructional material.

    If any time remains, share your teaching plan with your group.

    NOTE: As quickly as possible, review the critique forms for feedback information that may be helpful during other workshops.

Total Time: Approximately 2 hours.

PAK #3.1

ADVANCED WORKSHOP ON WRITING STUDENT OBJECTIVES

If the professional staff has already developed student objectives in the manner described on Pages 1-4, then it may be useful to devote a staff session to developing ways to improve affective learning and higher-level critical/creative thinking on the part of students.

20 min. Participants read Pages 5-8, 12.

30 min.

° Individually, using Pages 9-11, participants may work through Appendix B, exercises I,II, and III. Share responses in small groups. Check and discuss suggested answers on A-4.

****

° Using Page B-4 as a reference, each participant identifies an objective designed to further a student's higher-level thinking abilities. (analysis, synthesis, evaluation level on Page 9). Optionally, a small group may choose to work together.

30 min.

° Identify appropriate plans for measurement.

° Brainstorm a variety of activities designed to accomplish the objective. (taking into consideration varying needs of students).

° Determine instructional materials needs.

° Post results on wall using butcher paper, felt pens.

****

15 min. ° Participants individually read Pages 12-18.

****

° Working in groups of 4-6 participants, reach consensus on 1-3 building level "affective objectives."

25 min. Brainstorm ways that staff might work collaboratively to improve student development on those objectives over the next three months.

****

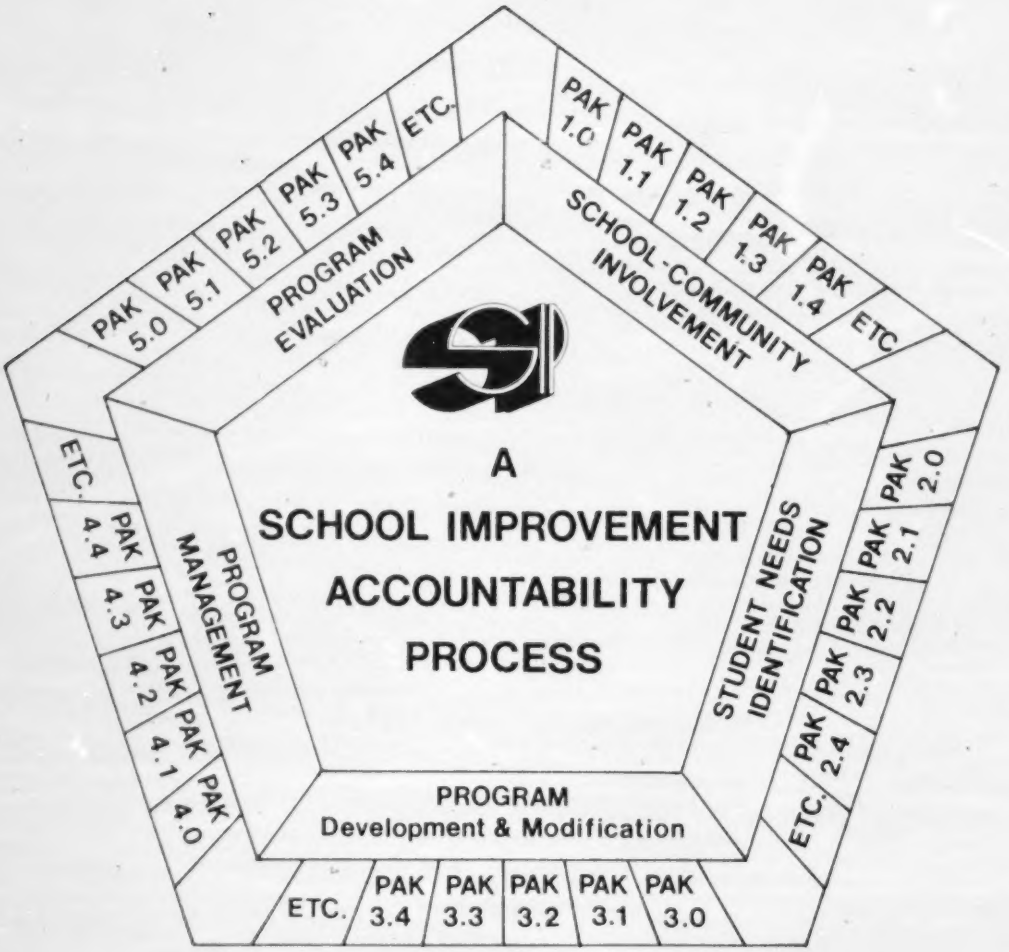
° Post results in teachers' planning area as visual reminder of staff's concern for student growth in these important objectives.

Total Time: Approximately 2 hours

PAK #3.1

ANSWERS TO EXERCISES

Exercise I	Exercise II	Exercise III
1. Analysis	1. Attending	1. Imitating
2. Comprehension	2. Organizing	2. Articulation
3. Knowledge	3. Valuing	3. Manipulation
4. Synthesis	4. Characterization	4. Precision
5. Evaluation	5. Responding	5. Naturalization
6. Application		


A
SCHOOL IMPROVEMENT
ACCOUNTABILITY
PROCESS
SCHOOL-COMMUNITY INVOLVEMENT
PAK 1.0
PAK 1.1
PAK 1.2
PAK 1.3
PAK 1.4
ETC.
STUDENT NEEDS IDENTIFICATION
PAK 2.0
PAK 2.1
PAK 2.2
PAK 2.3
PAK 2.4
ETC.
PROGRAM Development & Modification
PAK 3.0
PAK 3.1
PAK 3.2
PAK 3.3
PAK 3.4
ETC.
PROGRAM MANAGEMENT
PAK 4.0
PAK 4.1
PAK 4.2
PAK 4.3
PAK 4.4
ETC.
PROGRAM EVALUATION
PAK 5.0
PAK 5.1
PAK 5.2
PAK 5.3
PAK 5.4
ETC.

APPENDIX B

Exercise I: APPLYING BLOOM'S TAXONOMY (COGNITIVE DOMAIN) IN DETERMINING PERFORMANCE INDICATORS FOR STUDENT OBJECTIVES

Introduction: This exercise identifies several examples of performance indicators or ways to measure student objectives. Let us assume that the student objective in this example engages the concept of technology. Further, we may assume that some students have been investigating the technology of transportation.

Directions: Using the classification chart (Cognitive Domain) on Page nine of this PAK, identify the learning level at which each of the following performance indicators is written. That is, at what level must the student be operating in order to accomplish this performance indicator. The words in the center column of the chart may be used as cues in determining the appropriate level.

Place the appropriate answer for each statement in the space provided.

1. Given a statement of facts regarding present accomplishments in transportation technology, the learner will be able to draw correct inferences based upon the facts given.

   .....

2. Given knowledge of the effect of industrial and automotive pollutants on the environment, the learner will explain in his own words how these pollutants are affecting his community.

   .....

3. Given the list of means of transportation and a corresponding map of geographic locations, the learner will appropriately match conveyances to those locations where they are commonly employed.

   .....

4. Based upon existing research data regarding future transportation needs, the learner will design a feasible mass transit system for one of several designated areas.

   .....

5. From a list of five suggested solutions for present transportation problems, the pupil will select and justify the one he thinks most likely to improve human health and safety standards.

   ....

6. Using information regarding anticipated population growth for a given area and provided with a description of that area's present transportation facilities, the student will be able to predict likely changes in the existing facilities as a result of that population growth and improved technology.

   .....

Exercise II: APPLYING BLOOM'S TAXONOMY (AFFECTIVE DOMAIN) IN DETERMINING PERFORMANCE INDICATORS FOR STUDENT OBJECTIVES

Introduction: This exercise identifies several examples of performance indicators or ways to measure student objectives in the affective domain. Let us assume that the student objective in this example is one of improving attitudes regarding personal and physical health.

Directions: Using the classification chart (Affective Domain) on Page eleven of this PAK, identify the performance level which each of the following statements describe. That is, at which level of affective behavior must the student be functioning in order to accomplish each task.

Place the appropriate answer for each statement in the space provided.

1. The learner listens attentively to a presentation about drug abuse.

   .....

2. The learner independently prepares a written study of the local community's public health needs, prioritizing alternate approaches through which to meet the identified needs.

   .....

3. The learner initiates arrangements for a series of school/community meetings through which to discuss the local drug problem.

   .....

4. The learner demonstrates consistency of regard for human well-being by actively participating in those school and community programs whose purpose is to improve the quality of physical and mental health.

   .....

5. The learner voluntarily participates in a small group discussion concerning the problem of drug abuse and demonstrates positive concern for the topic by making at least two helping remarks to other group members.

   .....

Exercise III: APPLYING BLOOM'S TAXONOMY (PSYCHOMOTOR DOMAIN) IN DETERMINING PERFORMANCE INDICATORS FOR STUDENT OBJECTIVES

Introduction: This exercise identifies several examples of performance indicators or ways to measure student objectives in the psychomotor domain. Let us assume that the student objective in this example is one of demonstrating increased proficiency in eye-hand skills.

Directions: Using the classification chart (Psychomotor Domain) on Page thirteen of this PAK, identify the performance level which each of the following statements describe. That is, at which level of psychomotor behavior must the student be functioning in order to accomplish each task.

Place the appropriate answer for each statement in the space provided.

1. Student observes a baseball batter perform and copies his batting movements.

   .....

2. Student bats baseball with high degree of accuracy and consistency. Can modify his movements to correct batting weaknesses.

   .....

3. Student demonstrates ability to reproduce a correct batting stance following the directions of the teacher.

   .....

4. Student demonstrates increased skill in hitting the baseball without constant instruction. Indicates increased self-confidence by seeking out others with whom to play ball.

   .....

5. Student bats ball with proficiency. Demonstrates total coordination of movement; spontaneous; apparent minimal expenditure of mental effort -- high level of self-confidence.

   .....

STUDENT OBJECTIVE:

Relates to District Goal(s) #_____

Plan For Measurement: a.

b.

c.

_____
(Name of School)

Activities - Experiences	Instructional Materials	Teacher Strategies - Comments on Results

B-4

PAK #3.1

Activities to Generate Productive Divergent Thinking

Below are suggested several ways to encourage the development of creative thinking behaviors in students - such behaviors have been described as:

Fluent Thinking -	Generation of a quantity Who thinks of the most ideas Flow of thought Number of relevant responses Ability to produce the most in a given time
Flexible Thinking -	Number of different approaches Variety of kinds of ideas Ability to shift categories Versatility to change in focus Detours in direction of thought
Original Thinking -	Unusual responses Clever ideas Novel but relevant approaches Production away from the obvious Infrequent thought within the group or from one's own repertoire of responses
Elaborative Thinking -	Embellishing upon an idea Add necessary details to work out a new thougnt Production of detailed steps Embroider upon a simple idea or response to make it more elegant Sketch or expand upon things or ideas

I. Using a "checklist" approach - to systematically consider each item on the list as a possible source of innovation related to the problem at hand:

Put to other uses? New ways to use as it? Other uses if modified?

Adapt? What else is like this? What other idea does this suggest? Does past offer parallel? What could I copy? Whom could I emulate?

Modify? New twist? Change meaning, color, motion, sound, odor, form, shape? Other changes?

Magnify? What to add? More time? Greater frequency? Stronger? Higher? Longer? Thicker? Extra value? Plus ingredient? Duplicate? Multiply? Exaggerate?

Minify? What to subtract? Smaller? Condensed? Miniature? Lower? Shorter? Lighter? Omit? Streamline? Split up? Understate?

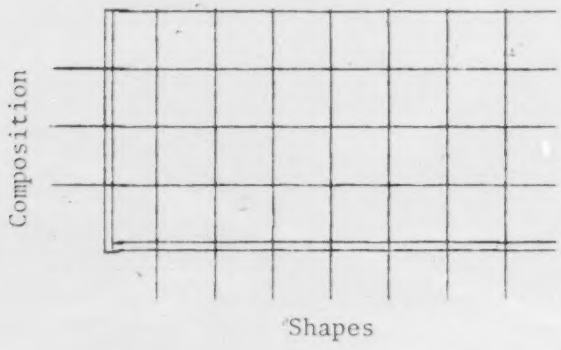
Substitute? Who else instead? What else instead? Other ingredient? Other material? Other process? Other power? Other place? Other approach? Other tone of voice?

Rearrange? Interchange components? Other pattern? Other layout? Other sequence? Transpose cause and effect? Change pace? Change schedule?

Reverse? Transpose positive and negative? How about opposites? Turn it backward? Turn it upside down? Reverse roles? Change shoes? Turn tables?

Combine? How about a blend, an alloy, an assortment, an ensemble? Combine units? Combine purposes? Combine appeals? Combine ideas?

II. Using a "checkerboard" approach - to generate unique solutions to a given problem (e.g. developing new packaging for soft drinks) by employing combinations of possibilities. Students begin by drawing a two-dimensional grid and placing a different factor on each axis. The intersection of these factors identifies a possible new solution. Further, multi-dimensional combinations may be identified by adding another dimension and corresponding factors.



III. "Creative Feedback"

Students (individually or as a group) experience a particular learning activity, e.g. field trip, auditorium or class presentation, film, lab experience, etc. Each student creates his way to share with the class and/or teacher what the experience meant to him---how he perceived it. Products or student accomplishments may be as far ranging as an original dance or dramatic sketch, painting, woodwork, pottery, collage, musical composition, expressive writing in verse or expository prose, etc.

PAK #3.1

SAMPLE STUDENT OBJECTIVES

The following represent a sample of student objectives from Colorado School Districts:

Collect and organize data

Practice effective work habits

Demonstrate concern for the well-being and dignity of others

Demonstrate the ability to encourage ethical and lawful behavior in others

Know the political structure of their community

Demonstrate an active interest in literature

Demonstrate the ability to evaluate literary works (possible criteria are those of form, affect, rhetoric, genre, tradition, intention, etc.)

Can recognize and apply the concept of style in art

Can identify and use the elements of notation (clefs, letter names of notes, key signatures, dynamic markings)

Distinguish various elements of music (timbre, rhythm, melody and harmony, texture)

Can perform a piece of music

Can invent and improvise music

Can recognize and describe subject matter elements of works of art

Describe and use characteristics of sensory qualities of works of art (colors, shapes, lines, texture, etc.)

Can produce original and imaginative works of art

Express visual ideas fluently

Demonstrate an understanding of a citizen's rights and responsibilities under the Constitution of the United States.

Accurately compute typical mathematical equations used in everyday life

Apply study habits and skills

Apply problem-solving techniques

Effectively express ideas and feelings in speech

Be able to define both short-range and long-range personal objectives

Be knowledgeable of the electoral process and how it can create change

Demonstrates competency in one or more job entry skills
Have identified personal vocational potential

PAK #_____
(Please fill in)

PAK CRITIQUE FORM

Please give your assessment and comments on the following:

PROGRAM ELEMENT	OUT-STANDING	VERY GOOD	FAIR	POOR	VERY POOR	COMMENTS
1. The quality & relevance of the subject matter.						
2. The appropriateness and usefulness of the instructional materials.						
3. The timing or sequencing of the various items presented.						
4. The directing and assistance given on the exercise.						

Other comments or suggestions for improving this PAK:

_____

_____

If this PAK was used as part of a WORKSHOP training session, then please also complete the following:

PROGRAM ELEMENT	OUT-STANDING	VERY GOOD	FAIR	POOR	VERY POOR	COMMENTS
5. The deployment, grouping or planned interaction of the participants						
6. The productivity and/or usefulness of the individual work session(s).						
7. The comments or assistance given to you on your selected problem.						